

to a guidance frame, and an estimated object state produced in the guidance frame using the vectored line-of-sight, wherein the means for generating adapts the guidance command signal based on an estimate of target maneuver frequency; and

means for transmitting the guidance command signal to an on-board  
guidance control of the device.

12. (Amended) A system for guiding a device toward an object in accordance with claim 1, wherein the means for generating a guidance command signal comprises:  
an augmented proportional navigational controller.

14. (Amended) A method for guiding a device toward an object comprising the steps of:  
creating a vectored object line-of-sight (LOS) in a guidance frame;  
producing an estimated object state, using sequential object LOS;  
using proportional navigation control to create a device guidance command as a function of an estimated range vector and an estimated velocity vector obtained using the estimated object state, wherein the device guidance command is adapted based on an estimate of target maneuver frequency.

18. (Amended) A method for guiding a device toward an object according to claim 16, wherein the step of creating an periodically adaptive guidance command comprises the step of:  
using a function of object maneuver frequencies, time-to-go before intercept, maneuver frequency correlation time constants, estimated target accelerations and estimated object acceleration rates.

20. (Amended) A method for guiding a device toward an object in accordance with claim 19, wherein the step of producing an estimated object state comprises the step of:

processing plural sequential estimated range vectors into an object state estimator in an inertial guidance frame estimated object state, wherein the estimated object state includes range, velocity, object acceleration and object acceleration rate.

21. (Amended) A guidance system for guiding a device toward an object comprising:

means for generating a signal representing a predicted position of the object from: object position parameters relative to a guidance frame and a periodically adaptive estimated object state produced in the guidance frame using the object position parameters, wherein the means for generating adapts the signal based on an estimate of target maneuver frequency; and,

means for transmitting the signal to an on-board guidance control of the device.

22. (Amended) A guidance system for guiding a device toward an object according to claim 21, comprising:

a fire control platform

wherein the means for generating a signal representing the predicted position of the object is located on the fire control platform, and the fire control platform is remote from the device.

23. (Amended) A method for guiding a device toward an object comprising the steps of:

obtaining object position parameters;

periodically adaptively producing an estimated object state;

creating a predicted position from the estimated object state; and,

determining a guidance command from the predicted position of the object,

wherein the guidance command is adapted based on an estimate of target maneuver frequency.

24. (Amended) A method for guiding a device toward an object according to claim 23 comprising the steps of:

transmitting the predicted position of the object from a remote location to the device;

wherein the step of determining a guidance command is performed on the device.

25. (Amended) A method for guiding a device toward an object according to claim 23, comprising the steps of:

obtaining device position parameters;

determining at a remote location a time-to-intercept; and,

transmitting the time-to-intercept from the remote location to the device.

*Kindly add new claim 26 as follows.*

26. (New) A system for guiding a device toward an object in accordance with claim 1, wherein the means for generating a guidance command signal is recursively adaptive.